

Figure 5

① * CONS MARAPPs..11..1111dal..aa.pa.EvtlIdkt.qgelgwispp..Gwee.sg.den.tplrtYqvcnyme.sqnn.Wlctnwl.
* EPH SSG ID NO. 18 MERRPGLGLVLLCAPLPFGARAKEVTIMDTSKAQELGWLDPKDGWSEQQILNGT.PLYMYQDCPMQGRBDTDHMLRSNWIY
* ECK SSG ID NO. 18 MELQARACFALLWGCALAAAAAQKEVLLDFAAGGELGWLTHPYGKMDLMQINMDM.PIYMYVCNVMMSGDDN.WLRTNMVY
* HEK4 SSG ID NO. 21 MDCQLSILLSCSVLDSFGELIPQSNENVLLDSKTIQELGWSYPSH.GWEISGVDEHYTPIRTYQVCNVMDSQNN.WLRTNMVP
* HEK5 SSG ID NO. 11 LLAABETLMDSTTATAELGMMVHPPS.GWEVSGYDENMNTIRTYQVCNVESSQNN.WLRTKFIR
* HEK7 SSG ID NO. 30 ALRTLLASPSNEVNLLDSRTVMGDLGWIAFPKN.GWEIGEVDENYAPIHTTYQVCCKWMEQNN.WLRTSMIS
* HEK8 SSG ID NO. 18 MAGIFYALFSCIFGICDAVTGSRVYPANEVTLLDSRSVQELGWIASPLEGWEVSIKDEKNTPIRTYQVCNVMERSQNN.WLRTDWMIT
* HEK2 MARAPP SSG ID NO. 18 MAGIFYALFSCIFGICDAVTGSRVYPANEVTLLDSRSVQELGWIASPLEGWEVSIKDEKNTPIRTYQVCNVMERSQNN.WLRTDWMIT
* HEK11 SSG ID NO. 17 MVEQTRYP SWIILCYIWLRFHTGEAQAKEVLLDLSKAQTELEWISSPPN.GWEISGIDENYTPIRTYQVCQWMEPNQNN.WLRTNMIS

* *

CONS ig.gaqriyvelkft.RDCns.Pgv1gt..CKETFNlyyesddd...tgrn1ren.fvkiDtiAdesftq.Dlgdr.mklnlevrsvgp1skkgfYL
EPH RGEASRVHVELQFTVRDCKSFPGAGPLGCKETFNLLYMESDD...VG1QLRPLFQKVTVADQSFTRDLASGSVKLNVERCSLGRLTRGLYL
ECK RG.EAERNFELNFTVRDCNSFPGGASS..CKETFNLYAESDLD...YGTNFQKRLFTKIDITADEITVSSDFEARHVKLNVEERSVGPLTRKGFYL
HEK4 RN.SAQIYVELKFTLRDCNSIPVLGT..CKETFNLYMESDD...HGKFRHQFTKIDITADESFTQMDLGRILKLNTEIREVGPVNKKGFYL
HEK5 RR.GAHRHIVEMKFSVRDCSSIPSPGGS..CKETFNLYEADFDSATKTFPNMNMENPVKVDITADESFSQVDLGRVVKINTEVRSFGPVSRSGFYL
HEK7 NE.GASRIEIKFTLRDCNSLPGGLGT..CKETFNMYFESDDQ...NGRNIKENQYIKIDITADESFTELDLDGRVVKLNTEVRDVGPLSKKGFYL
HEK8 RE.GAQRVYIEIKFTLRDCNSLPGVMGT..CKETFNLYYESDND...KERFIRENQFKIDITADESFTQVDIGDRIMKLNTEIRDVGPLSKKGFYL
HEK2 RR.DVQRVYVELKFTVRDCNSIPNIPGS..CKETFNLYEADSDVASASSPFWMENPVKVDITADESFSRLDAGR...NTKVRSEGPLSKAGFYL
HEK11 KG.NAQRIEVELKFTLRDCNSLPGVLGT..CKETFNLYYETDYD...TGRNIRENLYVKIDITADESFTQGDLDGRKMKLNTEVREIGPLSQKGFYL

* Continue throughout

FIGURE 1

CTG CTC GCC GCC GTG GAA GAA ACG CTA ATG GAC TCC ACT ACA GCG ACT Leu Leu Ala Ala Val Glu Glu Thr Leu Met Asp Ser Thr Thr Ala Thr 1 5 10 15	48
GCT GAG CTG GGC TGG ATG GTG CAT CCT CCA TCA GGG TGG GAA GAG GTG Ala Glu Leu Gly Trp Met Val His Pro Pro Ser Gly Trp Glu Glu Val 20 25 30	96
AGT GGC TAC GAT GAG AAC ATG AAC ACG ATC CGC ACG TAC CAG GTG TGC Ser Gly Tyr Asp Glu Asn Met Asn Thr Ile Arg Thr Tyr Gln Val Cys 35 40 45	144
AAC GTG TTT GAG TCA AGC CAG AAC AAC TGG CTA CGG ACC AAG TTT ATC Asn Val Phe Glu Ser Ser Gln Asn Asn Trp Leu Arg Thr Lys Phe Ile 50 55 60	192
CGG CGC CGT GGG GCC CAC CGC ATC CAC GTG GAG ATG AAG TTT TCG GTG Arg Arg Arg Gly Ala His Arg Ile His Val Glu Met Lys Phe Ser Val 65 70 75 80	240
CGT GAC TGC AGC AGC ATC CCC AGC GTG CCT GGC TCC TGC AAG GAG ACC Arg Asp Cys Ser Ser Ile Pro Ser Val Pro Gly Ser Cys Lys Glu Thr 85 90 95	288
TTC AAC CTC TAT TAC TAT GAG GCT GAC TTT GAC TCG GCC ACC AAG ACC Phe Asn Leu Tyr Tyr Tyr Glu Ala Asp Phe Asp Ser Ala Thr Lys Thr 100 105 110	336
TTC CCC AAC TGG ATG GAG AAT CCA TGG GTG AAG GTG GAT ACC ATT GCA Phe Pro Asn Trp Met Glu Asn Pro Trp Val Lys Val Asp Thr Ile Ala 115 120 125	384
GCC GAC GAG AGC TTC TCC CAG GTG GAC CTG GGT GGC CGC GTC ATG AAA Ala Asp Glu Ser Phe Ser Gln Val Asp Leu Gly Gly Arg Val Met Lys 130 135 140	432
ATC AAC ACC GAG GTG CGG AGC TTC GGA CCT GTG TCC CGC AGC GGC TTC Ile Asn Thr Glu Val Arg Ser Phe Gly Pro Val Ser Arg Ser Gly Phe 145 150 155 160	480
TAC CTG GCC TTC CAG GAC TAT GGC GGC TGC ATG TCC CTC ATC GCC GTG Tyr Leu Ala Phe Gln Asp Tyr Gly Gly Cys Met Ser Leu Ile Ala Val 165 170 175	528
CGT GTC TTC TAC CGC AAG TGC CCC CGC ATC ATC CAG AAT GGC GCC ATC Arg Val Phe Tyr Arg Lys Cys Pro Arg Ile Ile Gln Asn Gly Ala Il 180 185 190	576
TTC CAG GAA ACC CTG TCG GGG GCT GAG AGC ACA TCG CTG GTG GCT GCC Phe Gln Glu Thr Leu Ser Gly Ala Glu Ser Thr Ser Leu Val Ala Ala 195 200 205	624

CGG GGC AGC TGC ATC GCC AAT GCG GAA GAG GTG GAT GTA CCC ATC AAG Arg Gly Ser Cys Ile Ala Asn Ala Glu Glu Val Asp Val Pro Ile Lys 210 215 220	672
CTC TAC TGT AAC GGG GAC GGC GAG TGG CTG GTG CCC ATC GGG CGC TGC Leu Tyr Cys Asn Gly Asp Gly Glu Trp Leu Val Pro Ile Gly Arg Cys 225 230 235 240	720
ATG TGC AAA GCA GGC TTC GAG GCC GTT GAG AAT GGC ACC GTC TGC CGA Met Cys Lys Ala Gly Phe Glu Ala Val Glu Asn Gly Thr Val Cys Arg 245 250 255	768
GGT TGT CCA TCT GGG ACT TTC AAG GCC AAC CAA GGG GAT GAG GCC TGT Gly Cys Pro Ser Gly Thr Phe Lys Ala Asn Gln Gly Asp Glu Ala Cys 260 265 270	816
ACC CAC TGT CCC ATC AAC AGC CGG ACC ACT TCT GAA GGG GCC ACC AAC Thr His Cys Pro Ile Asn Ser Arg Thr Thr Ser Glu Gly Ala Thr Asn 275 280 285	864
TGT GTC TGC CGC AAT GGC TAC TAC AGA GCA GAC CTG GAC CCC CTG GAC Cys Val Cys Arg Asn Gly Tyr Tyr Arg Ala Asp Leu Asp Pro Leu Asp 290 295 300	912
ATG CCC TGC ACA ACC ATC CCC TCC GCG CCC CAG GCT GTG ATT TCC AGT Met Pro Cys Thr Thr Ile Pro Ser Ala Pro Gln Ala Val Ile Ser Ser 305 310 315 320	960
GTC AAT GAG ACC TCC CTC ATG CTG GAG TGG ACC CCT CCC CGC GAC TCC Val Asn Glu Thr Ser Leu Met Leu Glu Trp Thr Pro Pro Arg Asp Ser 325 330 335	1008
GGA GGC CGA GAG GAC CTC GTC TAC AAC ATC ATC TGC AAG AGC TGT GGC Gly Gly Arg Glu Asp Leu Val Tyr Asn Ile Ile Cys Lys Ser Cys Gly 340 345 350	1056
TCG GGC CGG GGT GCC TGC ACC CGC TGC GGG GAC AAT GTA CAG TAC GCA Ser Gly Arg Gly Ala Cys Thr Arg Cys Gly Asp Asn Val Gln Tyr Ala 355 360 365	1104
CCA CGC CAG CTA GGC CTG ACC GAG CCA CGC ATT TAC ATC AGT GAC CTG Pro Arg Gln Leu Gly Leu Thr Glu Pro Arg Ile Tyr Ile Ser Asp Leu 370 375 380	1152
CTG GCC CAC ACC CAG TAC ACC TTC GAG ATC CAG GCT GTG AAC GGC GTT Leu Ala His Thr Gln Tyr Thr Phe Glu Ile Gln Ala Val Asn Gly Val 385 390 395 400	1200
ACT GAC CAG AGC CCC TTC TCG CCT CAG TTC GCC TCT GTG AAC ATC ACC Thr Asp Gln Ser Pro Phe Ser Pro Gln Phe Ala Ser Val Asn Ile Thr 405 410 415	1248
ACC AAC CAG GCA GCT CCA TCG GCA GTG TCC ATC ATG CAT CAG GTG AGC Thr Asn Gln Ala Ala Pro Ser Ala Val Ser Ile Met His Gln Val Ser 420 425 430	1296

CGC ACC GTG GAC AGC ATT ACC CTG TCG TGG TCC CAG CCG GAC CAG CCC Arg Thr Val Asp Ser Ile Thr Leu Ser Trp Ser Gln Pro Asp Gln Pro 435 440 445	1344
AAT GGC GTG ATC CTG GAC TAT GAG CTG CAG TAC TAT GAG AAG GAG CTC Asn Gly Val Ile Leu Asp Tyr Glu Leu Gln Tyr Tyr Glu Lys Glu Leu 450 455 460	1392
AGT GAG TAC AAC GCC ACA GCC ATA AAA AGC CCC ACC AAC ACG GTC ACG Ser Glu Tyr Asn Ala Thr Ala Ile Lys Ser Pro Thr Asn Thr Val Thr 465 470 475 480	1440
GGC CTC AAA GCC GGC GCC ATC TAT GTC TTC CAG GTG CGG GCA CGC ACT Gly Leu Lys Ala Gly Ala Ile Tyr Val Phe Gln Val Arg Ala Arg Thr 485 490 495	1488
GTG GCA GGC TAC GGG CGC TAC AGC GGC AAG ATG TAC TTC CAG ACC ATG Val Ala Gly Tyr Gly Arg Tyr Ser Gly Lys Met Tyr Phe Gln Thr Met 500 505 510	1536
ACA GAA GCC GAG TAC CAG ACA AGC ATC CAG GAG AAG TTG CCA CTC ATC Thr Glu Ala Glu Tyr Gln Thr Ser Ile Gln Glu Lys Leu Pro Leu Ile 515 520 525	1584
ATC GGC TCC TCG GCC GCT GGC CTG GTC TTC CTC ATT GCT GTG GTT GTC Ile Gly Ser Ser Ala Ala Gly Leu Val Phe Leu Ile Ala Val Val Val 530 535 540	1632
ATC GCC ATC GTG TGT AAC AGA CGG GGG TTT GAG CGT GCT GAC TCG GAG Ile Ala Ile Val Cys Asn Arg Arg Gly Phe Glu Arg Ala Asp Ser Glu 545 550 555 560	1680
TAC ACG GAC AAG CTG CAA CAC TAC ACC AGT GGC CAC ATA ACC CCA GGC Tyr Thr Asp Lys Leu Gln His Tyr Thr Ser Gly His Ile Thr Pro Gly 565 570 575	1728
ATG AAG ATC TAC ATC GAT CCT TTC ACC TAC GAG GAC CCC AAC GAG GCA Met Lys Ile Tyr Ile Asp Pro Phe Thr Tyr Glu Asp Pro Asn Glu Ala 580 585 590	1776
GTG CGG GAG TTT GCC AAG GAA ATT GAC ATC TCC TGT GTC AAA ATT GAG Val Arg Glu Phe Ala Lys Glu Ile Asp Ile Ser Cys Val Lys Ile Glu 595 600 605	1824
CAG GTG ATC GGA GCA GGG GAG TTT GGC GAG GTC TGC AGT GGC CAC CTG Gln Val Ile Gly Ala Gly Glu Phe Gly Glu Val Cys Ser Gly His Leu 610 615 620	1872
AAG CTG CCA GGC AAG AGA GAG ATC TTT GTG GCC ATC AAG ACG CTC AAG Lys Leu Pro Gly Lys Arg Glu Ile Phe Val Ala Ile Lys Thr Leu Lys 625 630 635 640	1920
TCG GGC TAC ACG GAG AAG CAG CGC CGG GAC TTC CTG AGC GAA GCC TCC Ser Gly Tyr Thr Glu Lys Gln Arg Arg Asp Phe Leu Ser Glu Ala Ser 645 650 655	1968

ATC ATG GGC CAG TTC GAC CAT CCC AAC GTC ATC CAC CTG GAG GGT GTC Ile Met Gly Gln Phe Asp His Pro Asn Val Ile His Leu Glu Gly Val 660 665 670	2016
GTG ACC AAG AGC ACA CCT GTG ATG ATC ATC ACC GAG TTC ATG GAG AAT Val Thr Lys Ser Thr Pro Val Met Ile Ile Thr Glu Phe Met Glu Asn 675 680 685	2064
GGC TCC CTG GAC TCC TTT CTC CGG CAA AAC GAT GGG CAG TTC ACA GTC Gly Ser Leu Asp Ser Phe Leu Arg Gln Asn Asp Gly Gln Phe Thr Val 690 695 700	2112
ATC CAG CTG GTG GGC ATG CTT CGG GGC ATC GCA GCT GGC ATG AAG TAC Ile Gln Leu Val Gly Met Leu Arg Gly Ile Ala Ala Gly Met Lys Tyr 705 710 715 720	2160
CTG GCA GAC ATG AAC TAT GTT CAC CGT GAC CTG GCT GCC CGC AAC ATC Leu Ala Asp Met Asn Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile 725 730 735	2208
CTC GTC AAC AGC AAC CTG GTC TGC AAG GTG TCG GAC TTT GGG CTC TCA Leu Val Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Leu Ser 740 745 750	2256
CGC TTT CTA GAG GAC GAT ACC TCA GAC CCC ACC TAC ACC AGT GCC CTG Arg Phe Leu Glu Asp Asp Thr Ser Asp Pro Thr Tyr Thr Ser Ala Leu 755 760 765	2304
GGC GGA AAG TTC CCC ATC CGC TGG ACA GCC CCG GAA GCC ATC CAG TAC Gly Gly Lys Phe Pro Ile Arg Trp Thr Ala Pro Glu Ala Ile Gln Tyr 770 775 780	2352
CGG AAG TTC ACC TCG GCC AGT GAT GTG TGG AGC TAC GGC ATT GTC ATG Arg Lys Phe Thr Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Met 785 790 795 800	2400
TGG GAG GTG ATG TCC TAT GGG GAG CGG CCC TAC TGG GAC ATG ACC AAC Trp Glu Val Met Ser Tyr Gly Glu Arg Pro Tyr Trp Asp Met Thr Asn 805 810 815	2448
CAG GAT GTA ATC AAT GCC ATT GAG CAG GAC TAT CGG CTG CCA CCG CCC Gln Asp Val Ile Asn Ala Ile Glu Gln Asp Tyr Arg Leu Pro Pro Pro 820 825 830	2496
ATG GAC TGC CCG AGC GCC CTG CAC CAA CTC ATG CTG GAC TGT TGG CAG Met Asp Cys Pro Ser Ala Leu His Gln Leu Met Leu Asp Cys Trp Gln 835 840 845	2544
AAG GAC CGC AAC CAC CGG CCC AAG TTC GGC CAA ATT GTC AAC ACG CTA Lys Asp Arg Asn His Arg Pro Lys Phe Gly Gln Ile Val Asn Thr Leu 850 855 860	2592
GAC AAG ATG ATC CGC AAT CCC AAC AGC CTC AAA GCC ATG GCG CCC CTC Asp Lys Met Ile Arg Asn Pro Asn Ser Leu Lys Ala Met Ala Pro Leu 865 870 875 880	2640

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TCC TCT GGC ATC AAC CTG CCG CTG CTG GAC CGC ACG ATC CCC GAC TAC	2688
Ser Ser Gly Ile Asn Leu Pro Leu Leu Asp Arg Thr Ile Pro Asp Tyr	
885 890 895	
ACC AGC TTT AAC ACG GTG GAC GAG TGG CTG GAG GCC ATC AAG ATG GGG	2736
Thr Ser Phe Asn Thr Val Asp Glu Trp Leu Glu Ala Ile Lys Met Gly	
900 905 910	
CAG TAC AAG GAG AGC TTC GCC AAT GCC GGC TTC ACC TCC TTT GAC GTC	2784
Gln Tyr Lys Glu Ser Phe Ala Asn Ala Gly Phe Thr Ser Phe Asp Val	
915 920 925	
GTG TCT CAG ATG ATG ATG GAG GAC ATT CTC CGG GTT GGG GTC ACT TTG	2832
Val Ser Gln Met Met Met Glu Asp Ile Leu Arg Val Gly Val Thr Leu	
930 935 940	
GCT GGC CAC CAG AAA AAA ATC CTG AAC AGT ATC CAG GTG ATG CGG GCG	2880
Ala Gly His Gln Lys Lys Ile Leu Asn Ser Ile Gln Val Met Arg Ala	
945 950 955 960	
CAG ATG AAC CAG ATT CAG TCT GTG GAG GTT TGACATTCAC CTGCCTCGGC	2930
Gln Met Asn Gln Ile Gln Ser Val Glu Val	
965 970	
TCACCTCTTC CTCCAAGCCC CGCCCCCTCT GC	2962

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Figure 2

CCA GCG TCC CTG GCC GGC TGC TAC TCT GCA CCT CGA CGG GCT CCC CTC	48
Pro Ala Ser Leu Ala Gly Cys Tyr Ser Ala Pro Arg Arg Ala Pro Leu	
1 5 10 15	
TGG ACG TGC CTT CTC CTG TGC GCC GCA CTC CGG ACC CTC CTG GCC AGC	96
Trp Thr Cys Leu Leu Leu Cys Ala Ala Leu Arg Thr Leu Leu Ala Ser	
20 25 30	
CCC AGC AAC GAA GTG AAT TTA TTG GAT TCA CGC ACT GTC ATG GGG GAC	144
Pro Ser Asn Glu Val Asn Leu Leu Asp Ser Arg Thr Val Met Gly Asp	
35 40 45	
CTG GGA TGG ATT GCT TTT CCA AAA AAT GGG TGG GAA GAG ATT GGT GAA	192
Leu Gly Trp Ile Ala Phe Pro Lys Asn Gly Trp Glu Glu Ile Gly Glu	
50 55 60	
GTG GAT GAA AAT TAT GCC CCT ATC CAC ACA TAC CAA GTA TGC AAA GTG	240
Val Asp Glu Asn Tyr Ala Pro Ile His Thr Tyr Gln Val Cys Lys Val	
65 70 75 80	
ATG GAA CAG AAT CAG AAT AAC TGG CTT TTG ACC AGT TGG ATC TCC AAT	288
Met Glu Gln Asn Gln Asn Asn Trp Leu Leu Thr Ser Trp Ile Ser Asn	
85 90 95	
GAA GGT GCT TCC AGA ATC TTC ATA GAA CTC AAA TTT ACC CTG CGG GAC	336
Glu Gly Ala Ser Arg Ile Phe Ile Glu Leu Lys Phe Thr Leu Arg Asp	
100 105 110	
TGC AAC AGC CTT CCT GGA GGA CTG GGG ACC TGT AAG GAA ACC TTT AAT	384
Cys Asn Ser Leu Pro Gly Gly Leu Gly Thr Cys Lys Glu Thr Phe Asn	
115 120 125	
ATG TAT TAC TTT GAG TCA GAT GAT CAG AAT GGG AGA AAC ATC AAG GAA	432
Met Tyr Tyr Phe Glu Ser Asp Asp Gln Asn Gly Arg Asn Ile Lys Glu	
130 135 140	
AAC CAA TAC ATC AAA ATT GAT ACC ATT GCT GCC GAT GAA AGC TTT ACA	480
Asn Gln Tyr Ile Lys Ile Asp Thr Ile Ala Ala Asp Glu Ser Phe Thr	
145 150 155 160	
GAA CTT GAT CTT GGT GAC CGT GTT ATG AAA CTG AAT ACA GAG GTC AGA	528
Glu Leu Asp Leu Gly Asp Arg Val Met Lys Leu Asn Thr Glu Val Arg	
165 170 175	
GAT GTA GGA CCT CTA AGC AAA AAG GGA TTT TAT CTT GCT TTT CAA GAT	576
Asp Val Gly Pro L u Ser Lys Lys Gly Phe Tyr Leu Ala Phe Gln Asp	
180 185 190	
GTT GGT GCT TGC ATT GCT CTG GTT TCT GTG CGT GTA TAC TAT AAA AAA	624
Val Gly Ala Cys Ile Ala Leu Val Ser Val Arg Val Tyr Tyr Lys Lys	
195 200 205	

TGC CCT TCT GTG GTA CGA CAC TTG GCT GTC TTC CCT GAC ACC ATC ACT Cys Pro Ser Val Val Arg His Leu Ala Val Phe Pro Asp Thr Ile Thr 210 215 220	672
GGA GCT GAT TCT TCC CAA TTG CTC GAA GTG TCG GGC TCC TGT GTC AAC Gly Ala Asp Ser Ser Gln Leu Leu Glu Val Ser Gly Ser Cys Val Asn 225 230 235 240	720
CAT TCT GTG ACC GAT GAA CCT CCC AAA ATG CAC TGC AGC GCC GAA GGG His Ser Val Thr Asp Glu Pro Pro Lys Met His Cys Ser Ala Glu Gly 245 250 255	768
GAG TGG CTG GTG CCC ATC GGG AAA TGC ATG TGC AAG GCA GGA TAT GAA Glu Trp Leu Val Pro Ile Gly Lys Cys Met Cys Lys Ala Gly Tyr Glu 260 265 270	816
GAG AAA AAT GGC ACC TGT CAA GTG TGC AGA CCT GGG TTC TTC AAA GCC Glu Lys Asn Gly Thr Cys Gln Val Cys Arg Pro Gly Phe Phe Lys Ala 275 280 285	864
TCA CCT CAC ATC CAG AGC TGC GGC AAA TGT CCA CCT CAC AGT TAT ACC Ser Pro His Ile Gln Ser Cys Gly Lys Cys Pro Pro His Ser Tyr Thr 290 295 300	912
CAT GAG GAA GCT TCA ACC TCT TGT GTC TGT GAA AAG GAT TAT TTC AGG His Glu Glu Ala Ser Thr Ser Cys Val Cys Glu Lys Asp Tyr Phe Arg 305 310 315 320	960
AGA GAG TCT GAT CCA CCC ACA ATG GCA TGC ACA AGA CCC CCC TCT GCT Arg Glu Ser Asp Pro Pro Thr Met Ala Cys Thr Arg Pro Pro Ser Ala 325 330 335	1008
CCT CGG AAT GCC ATC TCA AAT GTT AAT GAA ACT AGT GTC TTT CTG GAA Pro Arg Asn Ala Ile Ser Asn Val Asn Glu Thr Ser Val Phe Leu Glu 340 345 350	1056
TGG ATT CCG CCT GCT GAC ACT GGT GGA AGG AAA GAC GTG TCA TAT TAT Trp Ile Pro Pro Ala Asp Thr Gly Gly Arg Lys Asp Val Ser Tyr Tyr 355 360 365	1104
ATT GCA TGC AAG AAG TGC AAC TCC CAT GCA GGT GTG TGT GAG GAG TGT Ile Ala Cys Lys Lys Cys Asn Ser His Ala Gly Val Cys Glu Glu Cys 370 375 380	1152
GGC GGT CAT GTC AGG TAC CTT CCC CGG CAA AGC GGC CTG AAA AAC ACC Gly Gly His Val Arg Tyr Leu Pro Arg Gln Ser Gly Leu Lys Asn Thr 385 390 395 400	1200
TCT GTC ATG ATG GTG GAT CTA CTC GCT CAC ACA AAC TAT ACC TTT GAG Ser Val Met Met Val Asp Leu Leu Ala His Thr Asn Tyr Thr Phe Glu 405 410 415	1248
ATT GAG GCA GTG AAT GGA GTG TCC GAC TTG AGC CCA GGA GCC CGG CAG Ile Glu Ala Val Asn Gly Val Ser Asp Leu Ser Pro Gly Ala Arg Gln 420 425 430	1296

TAT GTG TCT GTA AAT GTA ACC ACA AAT CAA GCA GCT CCA TCT CCA GTC Tyr Val Ser Val Asn Val Thr Thr Asn Gln Ala Ala Pro Ser Pro Val 435 440 445	1344
ACC AAT GTG AAA AAA GGG AAA ATT GCA AAA AAC AGC ATC TCT TTG TCT Thr Asn Val Lys Lys Gly Lys Ile Ala Lys Asn Ser Ile Ser Leu Ser 450 455 460	1392
TGG CAA GAA CCA GAT CGT CCC AAT GGA ATC ATC CTA GAG TAT GAA ATC Trp Gln Glu Pro Asp Arg Pro Asn Gly Ile Ile Leu Glu Tyr Glu Ile 465 470 475 480	1440
AAG CAT TTT GAA AAG GAC CAA GAG ACC AGC TAC ACG ATT ATC AAA TCT Lys His Phe Glu Lys Asp Gln Glu Thr Ser Tyr Thr Ile Ile Lys Ser 485 490 495	1488
AAA GAG ACA ACT ATT ACT GCA GAG GGC TTG AAA CCA GCT TCA GTT TAT Lys Glu Thr Thr Ile Thr Ala Glu Gly Leu Lys Pro Ala Ser Val Tyr 500 505 510	1536
GTC TTC CAA ATT CGA GCA CGT ACA GCA GCA GGC TAT GGT GTC TTC AGT Val Phe Gln Ile Arg Ala Arg Thr Ala Ala Gly Tyr Gly Val Phe Ser 515 520 525	1584
CGA AGA TTT GAG TTT GAA ACC ACC CCA GTG TTT GCA GCA TCC AGC GAT Arg Arg Phe Glu Phe Glu Thr Thr Pro Val Phe Ala Ala Ser Ser Asp 530 535 540	1632
CAA AGC CAG ATT CCT GTA ATT GCT GTG TCT GTG ACA GTA GGA GTC ATT Gln Ser Gln Ile Pro Val Ile Ala Val Ser Val Thr Val Gly Val Ile 545 550 555 560	1680
TTG TTG GCA GTG GTT ATC GGC GTC CTC CTC AGT GGA AGG CGG TGT GGC Leu Leu Ala Val Val Ile Gly Val Leu Ser Gly Arg Arg Cys Gly 565 570 575	1728
TAC AGC AAA GCA AAA CAA GAT CCA GAA GAG GAA AAG ATG CAT TTT CAT Tyr Ser Lys Ala Lys Gln Asp Pro Glu Glu Glu Lys Met His Phe His 580 585 590	1776
AAT GGG CAC ATT AAA CTG CCA GGA GTA AGA ACT TAC ATT GAT CCA CAT Asn Gly His Ile Lys Leu Pro Gly Val Arg Thr Tyr Ile Asp Pro His 595 600 605	1824
ACC TAT GAG GAT CCC AAT CAA GCT GTC CAC GAA TTT GCC AAG GAG ATA Thr Tyr Glu Asp Pro Asn Gln Ala Val His Glu Phe Ala Lys Glu Ile 610 615 620	1872
GAA GCA TCA TGT ATC ACC ATT GAG AGA GTT ATT GGA GCA GGT GAA TTT Glu Ala Ser Cys Ile Thr Ile Glu Arg Val Ile Gly Ala Gly Glu Phe 625 630 635 640	1920
GGT GAA GTT TGT AGT GGA CGT TTG AAA CTA CCA GGA AAA AGA GAA TTA Gly Glu Val Cys Ser Gly Arg Leu Lys Leu Pro Gly Lys Arg Glu Leu 645 650 655	1968

CCT GTG GCT ATC AAA ACC CTT AAA GTA GGC TAT ACT GAA AAG CAA CGC Pro Val Ala Ile Lys Thr Leu Lys Val Gly Tyr Thr Glu Lys Gln Arg 660 665 670	2016
AGA GAT TTC CTA GGT GAA GCA AGT ATC ATG GGA CAG TTT GAT CAT CCT Arg Asp Phe Leu Gly Glu Ala Ser Ile Met Gly Gln Phe Asp His Pro 675 680 685	2064
AAC ATC ATC CAT TTA GAA GGT GTG GTG ACC AAA AGT AAA CCA GTG ATG Asn Ile Ile His Leu Glu Gly Val Val Thr Lys Ser Lys Pro Val Met 690 695 700	2112
ATC GTG ACA GAG TAT ATG GAG AAT GGC TCT TTA GAT ACA TTT TTG AAG Ile Val Thr Glu Tyr Met Glu Asn Gly Ser Leu Asp Thr Phe Leu Lys 705 710 715 720	2160
AAA AAC GAT GGG CAG TTC ACT GTG ATT CAG CTT GTT GGC ATG CTG AGA Lys Asn Asp Gly Gln Phe Thr Val Ile Gln Leu Val Gly Met Leu Arg 725 730 735	2208
GGT ATC TCT GCA GGA ATG AAG TAC CTT TCT GAC ATG GGC TAT GTG CAT Gly Ile Ser Ala Gly Met Lys Tyr Leu Ser Asp Met Gly Tyr Val His 740 745 750	2256
AGA GAT CTT GCT GCC AGA AAC ATC TTA ATC AAC AGT AAC CTT GTG TGC Arg Asp Leu Ala Ala Arg Asn Ile Leu Ile Asn Ser Asn Leu Val Cys 755 760 765	2304
AAA GTG TCT GAC TTT GGA CTT TCC CGG GTA CTG GAA GAT GAT CCC GAG Lys Val Ser Asp Phe Gly Leu Ser Arg Val Leu Glu Asp Asp Pro Glu 770 775 780	2352
GCA GCC TAC ACC ACA AGG GGA GGA AAA ATT CCA ATC AGA TGG ACT GCC Ala Ala Tyr Thr Thr Arg Gly Gly Lys Ile Pro Ile Arg Trp Thr Ala 785 790 795 800	2400
CCA GAA GCA ATA GCT TTC CGA AAG TTT ACT TCT GCC AGT GAT GTC TGG Pro Glu Ala Ile Ala Phe Arg Lys Phe Thr Ser Ala Ser Asp Val Trp 805 810 815	2448
AGT TAT GGA ATA GTA ATG TGG GAA GTT GTG TCT TAT GGA GAG AGA CCC Ser Tyr Gly Ile Val Met Trp Glu Val Val Ser Tyr Gly Glu Arg Pro 820 825 830	2496
TAC TGG GAG ATG ACC AAT CAA GAT GTG ATT AAA GCG GTA GAG GAA GGC Tyr Trp Glu Met Thr Asn Gln Asp Val Ile Lys Ala Val Glu Glu Gly 835 840 845	2544
TAT CGT CTG CCA AGC CCC ATG GAT TGT CCT GCT GCT CTC TAT CAG TTA Tyr Arg Leu Pro Ser Pro M t Asp Cys Pro Ala Ala Leu Tyr Gln Leu 850 855 860	2592
ATG CTG GAT TGC TGG CAG AAA GAG CGA AAT AGC AGG CCC AAG TTT GAT Met Leu Asp Cys Trp Gln Lys Glu Arg Asn Ser Arg Pro Lys Phe Asp 865 870 875 880	2640

GAA ATA GTC AAC ATG TTG GAC AAG CTG ATA CGT AAC CCA AGT AGT CTG Glu Ile Val Asn Met Leu Asp Lys Leu Ile Arg Asn Pro Ser Ser Leu 885 890 895	2688
AAG ACG CTG GTT AAT GCA TCC TGC AGA GTA TCT AAT TTA TTG GCA GAA Lys Thr Leu Val Asn Ala Ser Cys Arg Val Ser Asn Leu Leu Ala Glu 900 905 910	2736
CAT AGC CCA CTA GGA TCT GGG GCC TAC AGA TCA GTA GGT GAA TGG CTA His Ser Pro Leu Gly Ser Gly Ala Tyr Arg Ser Val Gly Glu Trp Leu 915 920 925	2784
GAG GCA ATC AAG ATG GGC CGG TAT ACA GAG ATT TTC ATG GAA AAT GGA Glu Ala Ile Lys Met Gly Arg Tyr Thr Glu Ile Phe Met Glu Asn Gly 930 935 940	2832
TAC AGT TCA ATG GAC GCT GTG GCT CAG GTG ACC TTG GAG GAT TTG AGA Tyr Ser Ser Met Asp Ala Val Ala Gln Val Thr Leu Glu Asp Leu Arg 945 950 955 960	2880
CGG CTT GGA GTG ACT CTT GTC GGT CAC CAG AAG AAG ATC ATG AAC AGC Arg Leu Gly Val Thr Leu Val Gly His Gln Lys Lys Ile Met Asn Ser 965 970 975	2928
CTT CAA GAA ATG AAG GTG CAG CTG GTA AAC GGA ATG GTG CCA TTG TAACTTCATG 2983 Leu Gln Glu Met Lys Val Gln Leu Val Asn Gly Met Val Pro Leu 980 985 990	
TAAATGTCGC TTCTTCAAGT GAATGATTCT GCACTTTGTA AACAGCACTG AGATTTATTT	3043
TAACAAAAAA AGGGGGAAAA GGGAAAACAG TGATTTCTAA ACCTTAGAAA ACATTTGCCT	3103
CAGCCACAGA ATTTGTAATC ATGGTTTTAC TGAAGTATCC AGTTCTTAGT CCTTAGTCT	3162

Figure 3

AAGCGGCAGG AGCAGCGTTG GCACCGGCGA ACC ATG GCT GGG ATT TTC TAT TTC	54
Met Ala Gly Ile Phe Tyr Phe	
1 5	
GCC CTA TTT TCG TGT CTC TTC GGG ATT TGC GAC GCT GTC ACA GGT TCC	102
Ala Leu Phe Ser Cys Leu Phe Gly Ile Cys Asp Ala Val Thr Gly Ser	
10 15 20	
AGG GTA TAC CCC GCG AAT GAA GTT ACC TTA TTG GAT TCC AGA TCT GTT	150
Arg Val Tyr Pro Ala Asn Glu Val Thr Leu Leu Asp Ser Arg Ser Val	
25 30 35	
CAG GGA GAA CTT GGG TGG ATA GCA AGC CCT CTG GAA GGA GGG TGG GAG	198
Gln Gly Glu Leu Gly Trp Ile Ala Ser Pro Leu Glu Gly Gly Trp Glu	
40 45 50 55	
GAA GTG AGT ATC ATG GAT GAA AAA AAT ACA CCA ATC CGA ACC TAC CAA	246
Glu Val Ser Ile Met Asp Glu Lys Asn Thr Pro Ile Arg Thr Tyr Gln	
60 65 70	
GTG TGC AAT GTG ATG GAA CCC AGC CAG AAT AAC TGG CTA CGA ACT GAT	294
Val Cys Asn Val Met Glu Pro Ser Gln Asn Asn Trp Leu Arg Thr Asp	
75 80 85	
TGG ATC ACC CGA GAA GGG GCT CAG AGG GTG TAT ATT GAG ATT AAA TTC	342
Trp Ile Thr Arg Glu Gly Ala Gln Arg Val Tyr Ile Glu Ile Lys Phe	
90 95 100	
ACC TTG AGG GAC TGC AAT AGT CTT CCG GGC GTC ATG GGG ACT TGC AAG	390
Thr Leu Arg Asp Cys Asn Ser Leu Pro Gly Val Met Gly Thr Cys Lys	
105 110 115	
GAG ACG TTT AAC CTG TAC TAC TAT GAA TCA GAC AAC GAC AAA GAG CGT	438
Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu Ser Asp Asn Asp Lys Glu Arg	
120 125 130 135	
TTC ATC AGA GAG AAC CAG TTT GTC AAA ATT GAC ACC ATT GCT GCT GAT	486
Phe Ile Arg Glu Asn Gln Phe Val Lys Ile Asp Thr Ile Ala Ala Asp	
140 145 150	
GAG AGC TTC ACC CAA GTG GAC ATT GGT GAC AGA ATC ATG AAG CTG AAC	534
Glu Ser Phe Thr Gln Val Asp Ile Gly Asp Arg Ile Met Lys Leu Asn	
155 160 165	

ACC GAG ATC CGG GAT GTA GGG CCA TTA AGC AAA AAG GGG TTT TAC CTG Thr Glu Ile Arg Asp Val Gly Pro Leu Ser Lys Lys Gly Phe Tyr Leu 170 175 180	582
GCT TTT CAG GAT GTG GGG GCC TGC ATC GCC CTG GTA TCA GTC CGT GTG Ala Phe Gln Asp Val Gly Ala Cys Ile Ala Leu Val Ser Val Arg Val 185 190 195	630
TTC TAT AAA AAG TGT CCA CTC ACA GTC CGC AAT CTG GCC CAG TTT CCT Phe Tyr Lys Lys Cys Pro Leu Thr Val Arg Asn Leu Ala Gln Phe Pro 200 205 210 215	678
GAC ACC ATC ACA GGG GCT GAT ACG TCT TCC CTG GTG GAA GTT CGA GGC Asp Thr Ile Thr Gly Ala Asp Thr Ser Leu Val Glu Val Arg Gly 220 225 230	726
TCC TGT GTC AAC AAC TCA GAA GAG AAA GAT GTG CCA AAA ATG TAC TGT Ser Cys Val Asn Asn Ser Glu Glu Lys Asp Val Pro Lys Met Tyr Cys 235 240 245	774
GGG GCA GAT GGT GAA TGG CTG GTA CCC ATT GGC AAC TGC CTA TGC AAC Gly Ala Asp Gly Glu Trp Leu Val Pro Ile Gly Asn Cys Leu Cys Asn 250 255 260	822
GCT GGG CAT GAG GAG CGG AGC GGA GAA TGC CAA GCT TGC AAA ATT GGA Ala Gly His Glu Glu Arg Ser Gly Glu Cys Gln Ala Cys Lys Ile Gly 265 270 275	870
TAT TAC AAG GCT CTC TCC ACG GAT GCC ACC TGT GCC AAG TGC CCA CCC Tyr Tyr Lys Ala Leu Ser Thr Asp Ala Thr Cys Ala Lys Cys Pro Pro 280 285 290 295	918
CAC AGC TAC TCT GTC TGG GAA GGA GCC ACC TCG TGC ACC TGT GAC CGA His Ser Tyr Ser Val Trp Glu Gly Ala Thr Ser Cys Thr Cys Asp Arg 300 305 310	966
GGC TTT TTC AGA GCT GAC AAC GAT GCT GCC TCT ATG CCC TGC ACC CGT Gly Phe Phe Arg Ala Asp Asn Asp Ala Ala Ser Met Pro Cys Thr Arg 315 320 325	1014
CCA CCA TCT GCT CCC CTG AAC TTG ATT TCA AAT GTC AAC GAG ACA TCT Pro Pro Ser Ala Pro Leu Asn Leu Ile Ser Asn Val Asn Glu Thr Ser 330 335 340	1062
GTG AAC TTG GAA TGG AGT AGC CCT CAG AAT ACA GGT GGC CGC CAG GAC Val Asn Leu Glu Trp Ser Ser Pro Gln Asn Thr Gly Gly Arg Gln Asp 345 350 355	1110
ATT TCC TAT AAT GTG GTA TGC AAG AAA TGT GGA GCT GGT GAC CCC AGC Ile Ser Tyr Asn Val Val Cys Lys Lys Cys Gly Ala Gly Asp Pro Ser 360 365 370 375	1158
AAG TGC CGA CCC TGT GGA AGT GGG GTC CAC TAC ACC CCA CAG CAG AAT Lys Cys Arg Pro Cys Gly Ser Gly Val His Tyr Thr Pro Gln Gln Asn 380 385 390	1206

GGC TTG AAG ACC ACC AAA GTC TCC ATC ACT GAC CTC CTA GCT CAT ACC Gly Leu Lys Thr Thr Lys Val Ser Ile Thr Asp Leu Leu Ala His Thr 395 400 405	1254
AAT TAC ACC TTT GAA ATC TGG GCT GTG AAT GGA GTG TCC AAA TAT AAC Asn Tyr Thr Phe Glu Ile Trp Ala Val Asn Gly Val Ser Lys Tyr Asn 410 415 420	1302
CCT AAC CCA GAC CAA TCA GTT TCT GTC ACT GTG ACC ACC AAC CAA GCA Pro Asn Pro Asp Gln Ser Val Ser Val Thr Val Thr Thr Asn Gln Ala 425 430 435	1350
GCA CCA TCA TCC ATT GCT TTG GTC CAG GCT AAA GAA GTC ACA AGA TAC Ala Pro Ser Ser Ile Ala Leu Val Gln Ala Lys Glu Val Thr Arg Tyr 440 445 450 455	1398
AGT GTG GCA CTG GCT TGG CTG GAA CCA GAT CGG CCC AAT GGG GTA ATC Ser Val Ala Leu Ala Trp Leu Glu Pro Asp Arg Pro Asn Gly Val Ile 460 465 470	1446
CTG GAA TAT GAA GTC AAG TAT TAT GAG AAG GAT CAG AAT GAG CGA AGC Leu Glu Tyr Glu Val Lys Tyr Tyr Glu Lys Asp Gln Asn Glu Arg Ser 475 480 485	1494
TAT CGT ATA GTT CGG ACA GCT GCC AGG AAC ACA GAT ATC AAA GGC CTG Tyr Arg Ile Val Arg Thr Ala Ala Arg Asn Thr Asp Ile Lys Gly Leu 490 495 500	1542
AAC CCT CTC ACT TCC TAT GTT TTC CAC GTG CGA GCC AGG ACA GCA GCT Asn Pro Leu Thr Ser Tyr Val Phe His Val Arg Ala Arg Thr Ala Ala 505 510 515	1590
GGC TAT GGA GAC TTC AGT GAG CCC TTG GAG GTT ACA ACC AAC ACA GTG Gly Tyr Gly Asp Phe Ser Glu Pro Leu Glu Val Thr Thr Asn Thr Val 520 525 530 535	1638
CCT TCC CGG ATC ATT GGA GAT GGG GCT AAC TCC ACA GTC CTT CTG GTC Pro Ser Arg Ile Ile Gly Asp Gly Ala Asn Ser Thr Val Leu Leu Val 540 545 550	1686
TCT GTC TCG GGC AGT GTG GTG CTG GTG GTA ATT CTC ATT GCA GCT TTT Ser Val Ser Gly Ser Val Val Leu Val Val Ile Leu Ile Ala Ala Phe 555 560 565	1734
GTC ATC AGC CGG AGA CGG AGT AAA TAC AGT AAA GCC AAA CAA GAA GCG Val Ile Ser Arg Arg Arg Ser Lys Tyr Ser Lys Ala Lys Gln Glu Ala 570 575 580	1782
GAT GAA GAG AAA CAT TTG AAT CAA GGT GTA AGA ACA TAT GTG GAC CCC Asp Glu Glu Lys His Leu Asn Gln Gly Val Arg Thr Tyr Val Asp Pro 585 590 595	1830
TTT ACG TAC GAA GAT CCC AAC CAA GCA GTG CGA GAG TTT GCC AAA GAA Phe Thr Tyr Glu Asp Pro Asn Gln Ala Val Arg Glu Phe Ala Lys Glu 600 605 610 615	1878

ATT GAC GCA TCC TGC ATT AAG ATT GAA AAA GTT ATA GGA GTT GGT GAA Ile Asp Ala Ser Cys Ile Lys Ile Glu Lys Val Ile Gly Val Gly Glu 620 625 630	1926
TTT GGT GAG GTA TGC AGT GGG CGT CTC AAA GTG CCT GGC AAG AGA GAG Phe Gly Glu Val Cys Ser Gly Arg Leu Lys Val Pro Gly Lys Arg Glu 635 640 645	1974
ATC TGT GTG GCT ATC AAG ACT CTG AAA GCT GGT TAT ACA GAC AAA CAG Ile Cys Val Ala Ile Lys Thr Leu Lys Ala Gly Tyr Thr Asp Lys Gln 650 655 660	2022
AGG AGA GAC TTC CTG AGT GAG GCC AGC ATC ATG GGA CAG TTT GAC CAT Arg Arg Asp Phe Leu Ser Glu Ala Ser Ile Met Gly Gln Phe Asp His 665 670 675	2070
CCG AAC ATC ATT CAC TTG GAA GGC GTG GTC ACT AAA TGT AAA CCA GTA Pro Asn Ile Ile His Leu Glu Gly Val Val Thr Lys Cys Lys Pro Val 680 685 690 695	2118
ATG ATC ATA ACA GAG TAC ATG GAG AAT GGC TCC TTG GAT GCA TTC CTC Met Ile Ile Thr Glu Tyr Met Glu Asn Gly Ser Leu Asp Ala Phe Leu 700 705 710	2166
AGG AAA AAT GAT GGC AGA TTT ACA GTC ATT CAG CTG GTG GGC ATG CTT Arg Lys Asn Asp Gly Arg Phe Thr Val Ile Gln Leu Val Gly Met Leu 715 720 725	2214
CGT GGC ATT GGG TCT GGG ATG AAG TAT TTA TCT GAT ATG AGC TAT GTG Arg Gly Ile Gly Ser Gly Met Lys Tyr Leu Ser Asp Met Ser Tyr Val 730 735 740	2262
CAT CGT GAT CTG GCC GCA CGG AAC ATC CTG GTG AAC AGC AAC TTG GTC His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Asn Ser Asn Leu Val 745 750 755	2310
TGC AAA GTG TCT GAT TTT GGC ATG TCC CGA GTG CTT GAG GAT GAT CCG Cys Lys Val Ser Asp Phe Gly Met Ser Arg Val Leu Glu Asp Asp Pro 760 765 770 775	2358
GAA GCA GCT TAC ACC ACC AGG GGT GGC AAG ATT CCT ATC CGG TGG ACT Glu Ala Ala Tyr Thr Thr Arg Gly Gly Lys Ile Pro Ile Arg Trp Thr 780 785 790	2406
GCG CCA GAA GCA ATT GCC TAT CGT AAA TTC ACA TCA GCA AGT GAT GTA Ala Pro Glu Ala Ile Ala Tyr Arg Lys Phe Thr Ser Ala Ser Asp Val 795 800 805	2454
TGG AGC TAT GGA ATC GTT ATG TGG GAA GTG ATG TCG TAC GGG GAG AGG Trp Ser Tyr Gly Ile Val Met Trp Glu Val Met Ser Tyr Gly Glu Arg 810 815 820	2502
CCC TAT TGG GAT ATG TCC AAT CAA GAT GTG ATT AAA GCC ATT GAG GAA Pro Tyr Trp Asp Met Ser Asn Gln Asp Val Ile Lys Ala Ile Glu Glu 825 830 835	2550

GGC TAT CGG TTA CCC CCT CCA ATG GAC TGC CCC ATT GCG CTC CAC CAG	2598
Gly Tyr Arg Leu Pro Pro Pro Met Asp Cys Pro Ile Ala Leu His Gln	
840 845 850 855	
CTG ATG CTA GAC TGC TGG CAG AAG GAG AGG AGC GAC AGG CCT AAA TTT	2646
Leu Met Leu Asp Cys Trp Gln Lys Glu Arg Ser Asp Arg Pro Lys Phe	
860 865 870	
GGG CAG ATT GTC AAC ATG TTG GAC AAA CTC ATC CGC AAC CCC AAC AGC	2694
Gly Gln Ile Val Asn Met Leu Asp Lys Leu Ile Arg Asn Pro Asn Ser	
875 880 885	
TTG AAG AGG ACA GGG ACG GAG AGC TCC AGA CCT AAC ACT GCC TTG TTG	2742
Leu Lys Arg Thr Gly Thr Glu Ser Ser Arg Pro Asn Thr Ala Leu Leu	
890 895 900	
GAT CCA AGC TCC CCT GAA TTC TCT GCT GTG GTA TCA GTG GGC GAT TGG	2790
Asp Pro Ser Ser Pro Glu Phe Ser Ala Val Val Ser Val Gly Asp Trp	
905 910 915	
CTC CAG GCC ATT AAA ATG GAC CGG TAT AAG GAT AAC TTC ACA GCT GCT	2838
Leu Gln Ala Ile Lys Met Asp Arg Tyr Lys Asp Asn Phe Thr Ala Ala	
920 925 930 935	
GGT TAT ACC ACA CTA GAG GCT GTG GTG CAC GTG AAC CAG GAG GAC CTG	2886
Gly Tyr Thr Thr Leu Glu Ala Val Val His Val Asn Gln Glu Asp Leu	
940 945 950	
GCA AGA ATT GGT ATC ACA GCC ATC ACG CAC CAG AAT AAG ATT TTG AGC	2934
Ala Arg Ile Gly Ile Thr Ala Ile Thr His Gln Asn Lys Ile Leu Ser	
955 960 965	
AGT GTC CAG GCA ATG CGA ACC CAA ATG CAG CAG ATG CAC GGC AGA ATG	2982
Ser Val Gln Ala Met Arg Thr Gln Met Gln Gln Met His Gly Arg Met	
970 975 980	
GTT CCC GTC TGAGCCAGTA CTGAATAAAC TCAAACTCT TGAAATTAGT	3031
Val Pro Val	
985	
TTACCTCATC CATGCACTTT AATTGAAGAA CTGCACTTTT TTTACTTCGT CTTGCCCCC	3091
TGAAATTAAA GAAATGAAAA AAAAA	3116

Figure 4

CGGTGCGAGC GAACAGGAGT GGGGGGGAAA TTAAAAAAG CTAAACGTGG AGCAGCCGAT	60
CGGGGACCGA GAAGGGGAAT CGATGCAAGG AGCACACTAA AACAAAAGCT ACTTCGGAAC	120
AAACAGCATT TAAAAATCCA CGACTCAAGA TAACTGAAAC CTAAAATAAA ACCTGCTCAT	180
GCACC ATG GTT TTT CAA ACT CGG TAC CCT TCA TGG ATT ATT TTA TGC	227
Met Val Phe Gln Thr Arg Tyr Pro Ser Trp Ile Ile Leu Cys	
1 5 10	
TAC ATC TGG CTG CTC CGC TTT GCA CAC ACA GGG GAG GCG CAG GCT GCG	275
Tyr Ile Trp Leu Leu Arg Phe Ala His Thr Gly Glu Ala Gln Ala Ala	
15 20 25 30	
AAG GAA GTA CTA CTG CTG GAT TCT AAA GCA CAA CAA ACA GAG TTG GAG	323
Lys Glu Val Leu Leu Leu Asp Ser Lys Ala Gln Gln Thr Glu Leu Glu	
35 40 45	
TGG ATT TCC TCT CCA CCC AAT GGG TGG GAA GAA ATT AGT GGT TTG GAT	371
Trp Ile Ser Ser Pro Pro Asn Gly Trp Glu Glu Ile Ser Gly Leu Asp	
50 55 60	
GAG AAC TAT ACC CCG ATA CGA ACA TAC CAG GTG TGC CAA GTC ATG GAG	419
Glu Asn Tyr Thr Pro Ile Arg Thr Tyr Gln Val Cys Gln Val Met Glu	
65 70 75	
CCC AAC CAA AAC AAC TGG CTG CGG ACT AAC TGG ATT TCC AAA GGC AAT	467
Pro Asn Gln Asn Asn Trp Leu Arg Thr Asn Trp Ile Ser Lys Gly Asn	
80 85 90	
GCA CAA AGG ATT TTT GTA GAA TTG AAA TTC ACC CTG AGG GAT TGT AAC	515
Ala Gln Arg Ile Phe Val Glu Leu Lys Phe Thr Leu Arg Asp Cys Asn	
95 100 105 110	
AGT CTT CCT GGA GTA CTG GGA ACT TGC AAG GAA ACA TTT AAT TTG TAC	563
Ser Leu Pro Gly Val Leu Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr	
115 120 125	
TAT TAT GAA ACA GAC TAT GAC ACT GGC AGG AAT ATA AGA GAA AAC CTC	611
Tyr Tyr Glu Thr Asp Tyr Asp Thr Gly Arg Asn Ile Arg Glu Asn Leu	
130 135 140	
TAT GTA AAA ATA GAC ACC ATT GCT GCA GAT GAA AGT TTT ACC CAA GGT	659
Tyr Val Lys Ile Asp Thr Ile Ala Ala Asp Glu Ser Phe Thr Gln Gly	
145 150 155	
GAC CTT GGT GAA AGA AAG ATG AAG CTT AAC ACT GAG GTG AGA GAG ATT	707
Asp Leu Gly Glu Arg Lys Met Lys Leu Asn Thr Glu Val Arg Glu Ile	
160 165 170	

GGA CCT TTG TCC AAA AAG GGA TTC TAT CTT GCC TTT CAG GAT GTA GGG Gly Pro Leu Ser Lys Lys Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly 175 180 185 190	755
GCT TGC ATA GCT TTG GTT TCT GTC AAA GTG TAC TAC AAG AAG TGC TGG Ala Cys Ile Ala Leu Val Ser Val Lys Val Tyr Tyr Lys Lys Cys Trp 195 200 205	803
TCC ATT ATT GAG AAC TTA GCT ATC TTT CCA GAT ACA GTG ACT GGT TCA Ser Ile Ile Glu Asn Leu Ala Ile Phe Pro Asp Thr Val Thr Gly Ser 210 215 220	851
GAA TTT TCC TCT TTA GTC GAG GTT CGA GGG ACA TGT GTC AGC AGT GCA Glu Phe Ser Ser Leu Val Glu Val Arg Gly Thr Cys Val Ser Ser Ala 225 230 235	899
GAG GAA GAA GCG GAA AAC GCC CCC AGG ATG CAC TGC AGT GCA GAA GGA Glu Glu Glu Ala Glu Asn Ala Pro Arg Met His Cys Ser Ala Glu Gly 240 245 250	947
GAA TGG TTA GTG CCC ATT GGA AAA TGT ATC TGC AAA GCA GGC TAC CAG Glu Trp Leu Val Pro Ile Gly Lys Cys Ile Cys Lys Ala Gly Tyr Gln 255 260 265 270	995
CAA AAA GGA GAC ACT TGT GAA CCC TGT GGC CGT GGG TTC TAC AAG TCT Gln Lys Gly Asp Thr Cys Glu Pro Cys Gly Arg Gly Phe Tyr Lys Ser 275 280 285	1043
TCC TCT CAA GAT CTT CAG TGC TCT CGT TGT CCA ACT CAC AGT TTT TCT Ser Ser Gln Asp Leu Gln Cys Ser Arg Cys Pro Thr His Ser Phe Ser 290 295 300	1091
GAT AAA GAA GGC TCC TCC AGA TGT GAA TGT GAA GAT GGG TAT TAC AGG Asp Lys Glu Gly Ser Ser Arg Cys Glu Cys Glu Asp Gly Tyr Tyr Arg 305 310 315	1139
GCT CCA TCT GAC CCA CCA TAC GTT GCA TGC ACA AGG CCT CCA TCT GCA Ala Pro Ser Asp Pro Pro Tyr Val Ala Cys Thr Arg Pro Pro Ser Ala 320 325 330	1187
CCA CAG AAC CTC ATT TTC AAC ATC AAC CAA ACC ACA GTA AGT TTG GAA Pro Gln Asn Leu Ile Phe Asn Ile Asn Gln Thr Thr Val Ser Leu Glu 335 340 345 350	1235
TGG AGT CCT CCT GCA GAC AAT GGG GGA AGA AAC GAT GTG ACC TAC AGA Trp Ser Pro Pro Ala Asp Asn Gly Gly Arg Asn Asp Val Thr Tyr Arg 355 360 365	1283
ATA TTG TGT AAG CGG TGC AGT TGG GAG CAG GGC GAA TGT GTT CCC TGT Ile Leu Cys Lys Arg Cys Ser Trp Glu Gln Gly Glu Cys Val Pro Cys 370 375 380	1331
GGG AGT AAC ATT GGA TAC ATG CCC CAG CAG ACT GGA TTA GAG GAT AAC Gly Ser Asn Ile Gly Tyr Met Pro Gln Gln Thr Gly Leu Glu Asp Asn 385 390 395	1379

TAT GTC ACT GTC ATG GAC CTG CTA GCC CAC GCT AAT TAT ACT TTT GAA Tyr Val Thr Val Met Asp Leu Leu Ala His Ala Asn Tyr Thr Phe Glu 400 405 410	1427
GTT GAA GCT GTA AAT GGA GTT TCT GAC TTA AGC CGA TCC CAG AGG CTC Val Glu Ala Val Asn Gly Val Ser Asp Leu Ser Arg Ser Gln Arg Leu 415 420 425 430	1475
TTT GCT GCT GTC AGT ATC ACC ACT GGT CAA GCA GCT CCC TCG CAA GTG Phe Ala Ala Val Ser Ile Thr Thr Gly Gln Ala Ala Pro Ser Gln Val 435 440 445	1523
AGC GGA GTA ATG AAG GAG AGA GTA CTG CAG CGG AGT GTC GAG CTT TCC Ser Gly Val Met Lys Glu Arg Val Leu Gln Arg Ser Val Glu Leu Ser 450 455 460	1571
TGG CAG GAA CCA GAG CAT CCC AAT GGA GTC ATC ACA GAA TAT GAA ATC Trp Gln Glu Pro Glu His Pro Asn Gly Val Ile Thr Glu Tyr Glu Ile 465 470 475	1619
AAG TAT TAC GAG AAA GAT CAA AGG GAA CGG ACC TAC TCA ACA GTA AAA Lys Tyr Tyr Glu Lys Asp Gln Arg Glu Arg Thr Tyr Ser Thr Val Lys 480 485 490	1667
ACC AAG TCT ACT TCA GCC TCC ATT AAT AAT CTG AAA CCA GGA ACA GTG Thr Lys Ser Thr Ser Ala Ser Ile Asn Asn Leu Lys Pro Gly Thr Val 495 500 505 510	1715
TAT GTT TTC CAG ATT CGG GCT TTT ACT GCT GCT GGT TAT GGA AAT TAC Tyr Val Phe Gln Ile Arg Ala Phe Thr Ala Ala Gly Tyr Gly Asn Tyr 515 520 525	1763
AGT CCC AGA CTT GAT GTT GCT ACA CTA GAG GAA GCT ACA GGT AAA ATG Ser Pro Arg Leu Asp Val Ala Thr Leu Glu Glu Ala Thr Gly Lys Met 530 535 540	1811
TTT GAA GCT ACA GCT GTC TCC AGT GAA CAG AAT CCT GTT ATT ATC ATT Phe Glu Ala Thr Ala Val Ser Ser Glu Gln Asn Pro Val Ile Ile Ile 545 550 555	1859
GCT GTG GTT GCT GTA GCT GGG ACC ATC ATT TTG GTG TTC ATG GTC TTT Ala Val Val Ala Val Ala Gly Thr Ile Ile Leu Val Phe Met Val Phe 560 565 570	1907
GGC TTC ATC ATT GGG AGA AGG CAC TGT GGT TAT AGC AAA GCT GAC CAA Gly Phe Ile Ile Gly Arg Arg His Cys Gly Tyr Ser Lys Ala Asp Gln 575 580 585 590	1955
GAA GGC GAT GAA GAG CTT TAC TTT CAT TTT AAA TTT CCA GGC ACC AAA Glu Gly Asp Glu Glu Leu Tyr Phe His Ph Lys Phe Pro Gly Thr Lys 595 600 605	2003
ACC TAC ATT GAC CCT GAA ACC TAT GAG GAC CCA AAT AGA GCT GTC CAT Thr Tyr Ile Asp Pro Glu Thr Tyr Glu Asp Pro Asn Arg Ala Val His 610 615 620	2051

CAA TTC GCC AAG GAG CTA GAT GCC TCC TGT ATT AAA ATT GAG CGT GTG Gln Phe Ala Lys Glu Leu Asp Ala Ser Cys Ile Lys Ile Glu Arg Val 625 630 635	2099
ATT GGT GCA GGA GAA TTC GGT GAA GTC TGC AGT GGC CGT TTG AAA CTT Ile Gly Ala Gly Glu Phe Gly Glu Val Cys Ser Gly Arg Leu Lys Leu 640 645 650	2147
CCA GGG AAA AGA GAT GTT GCA GTA GCC ATA AAA ACC CTG AAA GTT GGT Pro Gly Lys Arg Asp Val Ala Val Ala Ile Lys Thr Leu Lys Val Gly 655 660 665 670	2195
TAC ACA GAA AAA CAA AGG AGA GAC TTT TTG TGT GAA GCA AGC ATC ATG Tyr Thr Glu Lys Gln Arg Arg Asp Phe Leu Cys Glu Ala Ser Ile Met 675 680 685	2243
GGG CAG TTT GAC CAC CCA AAT GTT GTC CAT TTG GAA GGG GTT GTT ACA Gly Gln Phe Asp His Pro Asn Val Val His Leu Glu Gly Val Val Thr 690 695 700	2291
AGA GGG AAA CCA GTC ATG ATA GTA ATA GAG TTC ATG GAA AAT GGA GCC Arg Gly Lys Pro Val Met Ile Val Ile Glu Phe Met Glu Asn Gly Ala 705 710 715	2339
CTA GAT GCA TTT CTC AGG AAA CAT GAT GGG CAA TTT ACA GTC ATT CAG Leu Asp Ala Phe Leu Arg Lys His Asp Gly Gln Phe Thr Val Ile Gln 720 725 730	2387
TTA GTA GGA ATG CTG AGA GGA ATT GCT GCT GGA ATG AGA TAT TTG GCT Leu Val Gly Met Leu Arg Gly Ile Ala Ala Gly Met Arg Tyr Leu Ala 735 740 745 750	2435
GAT ATG GGA TAT GTT CAC AGG GAC CTT GCA GCT CGC AAT ATT CTT GTC Asp Met Gly Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val 755 760 765	2483
AAC AGC AAT CTC GTT TGT AAA GTG TCA GAT TTT GGC CTG TCC CGA GTT Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Leu Ser Arg Val 770 775 780	2531
ATA GAG GAT GAT CCA GAA GCT GTC TAT ACA ACT ACT GGT GGA AAA ATT Ile Glu Asp Asp Pro Glu Ala Val Tyr Thr Thr Thr Gly Gly Lys Ile 785 790 795	2579
CCA GTA AGG TGG ACA GCA CCC GAA GCC ATC CAG TAC CGG AAA TTC ACA Pro Val Arg Trp Thr Ala Pro Glu Ala Ile Gln Tyr Arg Lys Phe Thr 800 805 810	2627
TCA GCC AGT GAT GTA TGG AGC TAT GGA ATA GTC ATG TGG GAA GTT ATG Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Met Trp Glu Val Met 815 820 825 830	2675
TCT TAT GGA GAA AGA CCT TAT TGG GAC ATG TCA AAT CAA GAT GTT ATA Ser Tyr Gly Glu Arg Pro Tyr Trp Asp Met Ser Asn Gln Asp Val Ile 835 840 845	2723

AAA GCA ATA GAA GAA GGT TAT CGT TTA CCA GCA CCC ATG GAC TGC CCA Lys Ala Ile Glu Glu Gly Tyr Arg Leu Pro Ala Pro Met Asp Cys Pro 850 855 860	2771
GCT GGC CTT CAC CAG CTA ATG TTG GAT TGT TGG CAA AAG GAG CGT GCT Ala Gly Leu His Gln Leu Met Leu Asp Cys Trp Gln Lys Glu Arg Ala 865 870 875	2819
GAA AGG CCA AAA TTT GAA CAG ATA GTT GGA ATT CTA GAC AAA ATG ATT Glu Arg Pro Lys Phe Glu Gln Ile Val Gly Ile Leu Asp Lys Met Ile 880 885 890	2867
CGA AAC CCA AAT AGT CTG AAA ACT CCC CTG GGA ACT TGT AGT AGG CCA Arg Asn Pro Asn Ser Leu Lys Thr Pro Leu Gly Thr Cys Ser Arg Pro 895 900 905 910	2915
ATA AGC CCT CTT CTG GAT CAA AAC ACT CCT GAT TTC ACT ACC TTT TGT Ile Ser Pro Leu Leu Asp Gln Asn Thr Pro Asp Phe Thr Thr Phe Cys 915 920 925	2963
TCA GTT GGA GAA TGG CTA CAA GCT ATT AAG ATG GAA AGA TAT AAA GAT Ser Val Gly Glu Trp Leu Gln Ala Ile Lys Met Glu Arg Tyr Lys Asp 930 935 940	3011
AAT TTC ACG GCA GCT GGC TAC AAT TCC CTT GAA TCA GTA GCC AGG ATG Asn Phe Thr Ala Ala Gly Tyr Asn Ser Leu Glu Ser Val Ala Arg Met 945 950 955	3059
ACT ATT GAG GAT GTG ATG AGT TTA GGG ATC ACA CTG GTT GGT CAT CAA Thr Ile Glu Asp Val Met Ser Leu Gly Ile Thr Leu Val Gly His Gln 960 965 970	3107
AAG AAA ATC ATG AGC AGC ATT CAG ACT ATG AGA GCA CAA ATG CTA CAT Lys Lys Ile Met Ser Ser Ile Gln Thr Met Arg Ala Gln Met Leu His 975 980 985 990	3155
TTA CAT GGA ACT GGC ATT CAA GTG TGATATGCAT TTCTCCCTTT TAAGGGAGAT Leu His Gly Thr Gly Ile Gln Val 995	3209
TACAGACTGC AAGAGAACAG TACTGGCCTT CAGTATATGC ATAGAATGCT GCTAGAAGAC	3269
AAGTGATGTC CTGGGTCCTT CCAACAGTGA AGAGAAGATT TAAGAAGCAC CTATAGACTT	3329
GAACCTCTAA GTGCCACCAG AATATATAAA AAGGGAATTT AGGATCCACC ATCGGTGGCC	3389
AGGAAAATAG CAGTGACAAT AAACAAAGTA CTACCTGAAA AACATCCAAA CACCTTGAGC	3449
TCTCTAACCT CCTTTTGTGTC TTATAGACTT TTTAAAATGT ACATAAAGAA TTTAAGAAAG	3509
AATATATTTG TCAAATAAAA TCATGATCTT ATTGTTAAAA TTAATGAAAT ATTTTCCTTA	3569
AATATGTGAT TTCAGACTAT TCCTTTTTTAA AATCATTTGT GTTTATTCTT CATAAGGACT	3629
TTGTTTTAGA AAGCTGTTTA TAGCTTTGGA CCTTTTTAGT GTTAAATCTG TAACATTACT	3689
ACACTGGGTA CCTTTGAAAG AATCTCAAAT TTCAAAGAA ATAGCATGAT TGAAGATACA	3749

TCTCTGTTAG AACATTGGTA TCCTTTTTGT GCCATTTTAT TCTGTTTAAT CAGTGCTGTT	3809
TTGATATTGT TTGCTAATTG GCAGGTAGTC AAGAAAATGC AAGTTGCCAA GAGCTCTGAT	3869
ATTTTTTAAA AAGAATTTTT TTGTAAAGAT CAGACAACAC ACTATCTTTT CAATGAAAAA	3929
AGCAATAATG ATCCATACAT ACTATAAGGC ACTTTTAACA GATTGTTTAT AGAGTGATTT	3989
TACTAGAAAG AATTTAATAA ACTCGAAGTT TAGGTTTATG AGTATATAAA CAAATGAGGC	4049
ACTTCATCTG AAGAATGTTG GTGAAGGCAA GTCTCTGAAA GCAGAACTAT CCAGTGTTAT	4109
CTAAAAATTA ATCTGAGCAC ATCAAGATT TTTTATTCTC GTGACATTAG GAAATTTAGG	4169
ATAAATAGTT GACATATATT TTATATCCTC TTCTGTTGAA TGCAGTCCAA ACATGAAAGG	4229
AAATAATTGT TTTATATTAT AACTCTGAAG CATGATAAAG GGGCAGTTCA CAATTTTCAC	4289
CATTTAAACA CAAATTTGCT GCACAGAATA TCACCATTGC AGTTCAAAAC AAAACAAAAC	4349
AAAAAGTCTT TTGTTTGTGA AACTGTATGC AAGAACTTG TTAAATGAAA GGA CTCTTTA	4409
CCCTAGAAGG AAGAGGTGAA GGATCTGGCT TGTTTTTAAA GCTTTATTTA TTAAACCATA	4469
TTATTTGATT ACTGTGTTAG AATTTTCATAA GCAATAATTA AATGTGTCTT TATGGAATTC	4529

Figure 5

* * * * *

CONS AFqdvgaC.alvsVrv.ykkcpstv.n.lA.Fpdt.tgadssslvevrg.Cvna...e...pp.m.CsadgeWlVlGkC.CkaGyee...gtacqacp
EPH AFHNPgacvalvsrvfYQRCpETInGLAQFPDTlPg.PA.GLVEVAGTCLPHARASPRPSGAPRMHCSBDGEWLVVGRCHCEPGEEGSGEACVACP
ECK AFQDIGACVALLSVRVYKKCPeLLQGLAHFPETIAGSDAPSLATVAGTCVDHA.VVPPGGEPRMHCAVDGEWLVPIGQCLCQAGYEKVED..ACQACS
HEK4 AFQDVGACVALSVRVYKKCPFTVKNLAMFPDTPV.MDSQSLVEVRGSCVNNS...KEEDPRMYCSTEGEWLVPIGKCSNAGYEER..GfMCQACR
HEK5 AFQDYGCMsLIAVRVfYRKCPRIIONGAIFQETLSGAESTSLVAARGSCIANA...EEVDVPIKLYCNGDGEMLVPIGRCMCKAGFEAVENGTVCRGCP
HEK7 AFQDVGACIALSVRVYKKCPsVRHLAVFPDITTGADSSQLLEVSgSCVNHS...VTDEPRMHCSAEGEWLVPIGNCLCNAGHEER..SGECQACK
HEK8 AFQDVGACIALSVRVfYKKCPLTVRNLAQFPDITTGADTSSLVEVRGSCVNNS...EEKDVPKMYCGADGEWLVPIGNCLCNAGHEER..SGECQACK
HEK2 AFQDQACMSLISVRAFYKKCASTAGFALFPETLTGAEPtSLVIAFGTCIPNA...VEVSVPKLYCNGDGEMWVPVGACTCATGHEPAKESQCRPCP
HEK11 AFQDVGACIALSVRVYKKCWSIENLAIFPDITVTGSEFSsLVEVRGTCVSSA..EEEAENAPRMHCSAEGEWLVPIGKCICKAGYQOK..GDTCEPCG

* * * * *

CONS pgfyka..gd.pclkcprhs.ttsagatsCtCengy.RadsdpmsmaCtRpsapRnlIsnvnetsv.lEWapPadtGgr.Dv.yn.lCkKcg.ga...g
EPH SGSYRMDMDTPHCLTCPOQSTAESEGATICTCESGHYRAPGEGEOVACTGPPSAPRNLsFSASGTQLSLRWEPPADTGGRODVRYSVRCSQCGTAQDGG
ECK PGFFKFEASESPCLECPeHTLPSegATSCeCEEGFFRAPQDPASNECTRPSAPHYLTAVGMGAkVELRWTPPODSGREDIVYSVTCEQCPES...G
HEK4 PGfYKALDGNMCKACPRPHSSTQEDGSMNCRCENNYFRADKDPsMACTRPPSSPRNVISINETSVILDWSWPLDTGGRDVTfNIICKKCGWNI...K
HEK5 SGTFKANQDEACTHCPINSRTTSEGATNCVCrNGYRRADLDPLDMECTTIPsAPQAVISVNETSIMLEWTIPPRDSGGREDLVYNIICKSGSGR...G
HEK7 PGFFKASPHIQSGCKPRPHSYTHEASTSCVCEKDYFRRESDPPTMACTRPPSAPRNAISNVNETSVfLEWIPPADTGGRKDVSYIACKKCNsHA...G
HEK8 IGYKALSTDATCAKCPRHsYSVMEGATsCTCDRGfFRADNDAAsmPCTRPpSAPLNLISNVNETSVNLEWSSPONTGGRODISNVVCKKCGAGD..PS
HEK2 PGsYKAKQGEgPClPCPpNSRTtSPASICTCHNNfYRADSDSADsACTIVESPpRGVISNVNETSLILEWSEPRDLGVRDDLNVNICKK.C.HGAGGAS
HEK11 RGFYKSSSQDLQCSRCPTHSfSDKEGSSRCECEDGYRRAPSDPPYACTRPPSAPQNLfINQITVSLEWSPPADNGGRNDVTYRIICKKCSMEQ...G

Figure 5

* *
CONS .CepCg.nvry.piqIqLt.t.vtvsdlJahntnYfe.eAVNGVs.l....sp.q.asvsv.lctnqaaps.v.tvr.....sr.s.sIsw.qep.rpnv
EPH PCQPCGVGHFSPGARALTPAVHNGLEPYANTYFNVEAÜNGVSGLGSSGHAS..TSVISMGHAESLS..GLSLRLVKRPRQLELTWAGSRPRPGA
ECK ECGPCEASVRYSEPHGLTRTSVTSVSDLEPHMYTFTEARNGVSGLVTSRSEF.TASVS..I..NQ...TEPKVRLEGRSTSLSVSW.SIPPPQSR
HEK4 QCEPCSPNREFLPRQGLTNTVTVDLLAHTNYTFEIDA VNGVSEL..SSPRQFAV..SITNQAPSPVLTIKDRTSRNSISLSW.QEPEHNGI
HEK5 ACTRCGDNVQYAPRQGLTEPRIRYISDLAHTQYTFEIQAVNGVTD..QSPFSPQFASV..NITNQAPSAVSIMHÖVSRVDSITLSW.SQPDQPNGV
HEK7 VCEECGGHVRILPRQSGLKNTSVMMDLLAHTNYTFEIEAVNGVSDL....SPGARQYVS VNTNQAPSPVTNKKGI AKNSISLSW.QEPRPNGI
HEK8 KCRPCGSGVHYTPQONGLKTKV SITDLLAHTNYTFEIMAVNGVSK....YNPNDQSVSVTTNQAPSSIALVQAKEVTRYVALAW.LEPDRPNGV
HEK2 ACSRCDDNVEFVPRQGLSEPRVHTSHLLAHTRYTFEVQAVNGVSGK....SPLPRYA VNTNQAPSEVPTLRLHSSSGSSLTLSW.APPERPNGV
HEK1 ECVPCGSNIGMPQQTGLEDNVVTMDLLAHANTFEVEAVNGVSDL....SRSQRLFAV SITTGQAPSOVSGVMKERVLQRSVELSW.QEPEHPNGV

CONS 11.YEvkyekdq.ersy.lv..k.tsvt.dglkpd.t.YvqvarTaGyG..Sr..efet.pea.sgs...lvvvlivs.aga..llvv..v.l..r
EPH NLTYE....LHVLNÖDEERYQMVLEPRVLLTELQPDTTYIVRVRLPLGPFPSPDHEFRTPSPVSRGLTGGEIYAVIFGLLIGALLGILVERSRRA
ECK VMKYEV.TYRKKGDSNSYNVRTEGFSVTLDDLPDTTYLVQVQALTOEGGAGSKVHEFQTLSPESGNI LAVIGI VGVLLLVLAGVEE IHRRAKN
HEK4 ILDYEVKYYEKQEQETSYTILRAGTNTISSLKPDITYVLQIRARTAGYGTNSRKEFEFETSPDSFSISGESSSÖVVMTAISAAVALILLTVIYVLLIGR
HEK5 ILDYELQYYEKELSEYNATAIKSPNTVTYVQGLKAGAIYVFQVRARTVAGYGRYSGMYFQMTAEYQTSIQEKLPLIGSSAAGIVELLAVVYIALYC
HEK7 ILEYEIKHFEKDOETSYTII.KSKETITAGGLKPASVYVFQIRARTAGYGVFSRREFETTPVFAASSDQSLPYIAVSVTGVLLAVIIGVLLSGR
HEK8 ILEYEVKYYEKQÖNERSYRIVRTAARNTDIKGLNPLTSYVFHVRARTAGYGFSEPLEVTNTVPRIIGDANSTYLLAVSVSGSVLVVYLLIAEYIS
HEK2 ILDYEMKYFEK..SEGIASTVTSÖMNSVQLDGLRDPDARYVQVRARTVAGYGYSRPAFEETTSERGSQAQOLOEOLPLIYGSATAGLVEYVAVVYVYLAIV
HEK11 ITEYEIKYYEKDQÖRERTYSTVKTKSTASINNLRPGTYVVFQIRAF TAGYGNYSRDLVATLEATGKMEATAVSSEÖNPLYIIAVVXVAGTLLIYEM

Figure 5

⇒

CONS .r...qsr.dd.ey.keq.....klpg.ktyldp.tyedpnqav.efakeIdasciklekviGagefgevcsgrlkp..gkre..VAIKTLkvgy
EPH ORQROQRHVTAAPPMMIERTSCAALCGTSRHTRTLHREBWTL..PGWMSNFPsRELDPAWIMVDTVIGEGEFGEVYRGTLRlPS.QDCKTVAIKTLKDTs
ECK QRARQSPEDVYFSKSEQ.....LKP LKTYVDPHTYEDPNQAVLKFTEIHPSCVTRQKVIgAGEFGEVYKGMlKTSsGKREVPVAIKTLKAGY
HEK4 FCGYKSKHGADeKRLHFGNG.....HLKLPGLRTYVDPHTYEDPTQAVHEFAKELDATNISIDKVVGAGEFGEVCSGRlKLPS.KKEISVAIKTLKSGY
HEK5 NRRGFERADSEYTDKLOHYT.....SGHITPGMKIYIDPFTYEDPNEAVREFAKEIDISCVKIEQVIGAGEFGEVCSGRlKLp.GKREIcVAIKTLKAGY
HEK7 RCGYSKAKQDPPEEKMHFN.....GHIKLPGVRTYIDPHTYEDPNQAVHEFAKEIEASCITIERVIGAGEFGEVCSGRlKLp.GKRELpVAIKTLKAGY
HEK8 RRRSKYSKAKQEADEEKHLN.....QGVRTYVDPFTYEDPNQAVREFAKEIDASCiKIEKVIgVGEFGEVCSGRlKVP.GKREICVAIKTLKAGY
HEK2 CLRKQRHGSdSEYTEKLOOY.....IAPGMKVYIDPFTYEDPNEAVREFAKEIDVSCVKIEEVIgAGEFGEVCRGRlKOP.GRREVFVAIKTLKVGy
HEK11 YEGELIGRRHCGYTKADQEGDEELYFHFEPGCTKYIDPETYEDPNRAVHQFAKELDASCiKIERVIGAGEFGEVCSGRlKLp.GKRDVAVAIKTLKVGy
CONS tekQrrdfl.EAsimgQFdHPnlhlhlegvvtckspvmlite.MENG.ld.FLkndgqfctvIqLVgMLRGIAaGmKylsdmnyVHRDLAARNILVNSNLV
EPH PGQWwNfLREAtINGQFSHPHlLhlegvvtkrkPIMIITEFMENALDAFLEREDQlVPGQLVAMLOGIASGMNYLSNNHYVHRDLAARNILVNSNLc
ECK TEKQrVdFlGEAGINGQFSHNNIIRLEGVIsKkYPMIITEYMENGALDKFLREKDEFSVLQLVGMlRGIAAGMKYLANNYVHRDLAARNILVNSNLV
HEK4 TEKQrRdFlGEASimgQFDHPNIIRLEGVtKSKRPVMIITEYMENGSLDSFLRKHDQFTVIOLVGMlRGIAAGMKYLSDMGYVHRDLAARNILVNSNLV
HEK5 TEKQrRdFlSEASimgQFDHPNVihlegvvtKSTPVMIIITEFMENGSLDSFLRQNDGQFTVIOLVGMlRGIAAGMKYLAADmnyVHRDLAARNILVNSNLV
HEK7 TEKQrRdFlGEASimgQFDHPNIihlegvvtKSKRPVMIITEYMENGSLDAFLRKNDGRFTVIOLVGMlRGISAGMKYLSDMGYVHRDLAARNILVNSNLV
HEK8 TDKQrRdFlSEASimgQFDHPNIihlegvvtKCKRPVMIITEYMENGSLDAFLRKNDGRFTVIOLVGMlRGISAGMKYLSDMGYVHRDLAARNILVNSNLV
HEK2 TERQrRdFlSEASimgQFDHPNIIRLEGVtKSRPVMIITEFMENCALDSFLRLNDGQFTVIOLVGMlRGIAAGMKYLSemnyVHRDLAARNILVNSNLV
HEK11 TEKQrRdFlCEASimgQFDHPNVVhlegvvtRGPVMIITEFMENGALHAFLRKHdGQFTVIOLVGMlRGIAAGMRylADMGYVHRDLAARNILVNSNLV

Figure 5

*
CONS CKVSDFGLSRVLEDD.pea.yt.tlGGKIPIRWTAPEAIAYRKFTSASDVMSYGIVMMEVMSYGeP.Yw.mnQdVikaLeegyRLpPpMDCPaal.qLM
EPH CKVSDFGLTRLL.DDFDGIYET..OGGKIPIRWTAPEAIARIFTTASDVMSFGIVMMEVLSFGDKPYGEMSNQEVMSIEDGYRLPpPVDcPaLyeLM
ECK CKVSDFGLSRVLEDD.PEATYT.TSGKIPIRWTAPEAISYRKFTSASDVMSFGIVMMEVMTYGERPYMELSNHEVMKAIINDGFRLPpPMDcPSAIYQLM
HEK4 CKVSDFGLSRVLEDD.PEAYT.TRGKIPIRWTSPEAIAYRKFTSASDVMSYGIVLMEVMSYGERPYMMSNQDVIRKAVEGYRLPpPMDcPSALHQLM
HEK5 CKVSDFGLSRVLEDDSDPTYSALGGKPIRWTAPeAIQYRKFTSASDVMSYGIVMMEVMSYGERPYMENTNQDVIRAVEEGYRLPpPMDcPaLYQLM
HEK7 CKVSDFGLSRVLEDD.PEAYT.TRGKIPIRWTAPEAIAFRKFTSASDVMSYGIVMMEVMSYGERPYMMSNQDVIRKAVEGYRLPpPMDcPIALHQLM
HEK8 CKVSDFGMSRVLEDD.PEAYT.TRGKIPIRWTAPEAIAYRKFTSASDVMSYGIVMMEVMSYGERPYMMSNQDVIRKAVEGYRLPpPMDcPTALHQLM
HEK2 CKVSDFGLSRVLEDDSDPTYSALGGKPIRWTAPeAIAYRKFTSASDVMSYGIVMMEVMSYGERPYMMSNQDVIRKAVEGYRLPpPMDcPTALHQLM
HEK1 CKVSDFGLSRVLEDD.PEAVT.TTGKIPYRWTAPeAIQYRKFTSASDVMSYGIVMMEVMSYGERPYMMSNQDVIRKAVEGYRLPpPMDcPaGLHQLM
*
CONS lDcWqk.RnRPRkf.qIvnlldkllrnpnSlkta.assr.s.plld.sgpD.tlftvgemleakmgryke.ftaagyts..avaqmtaedi.rIGvt
EPH KNCWAYDRARARPHFQKLAHLEQLLANPHSLRTIANFDERVTLRLPLSLSGSDGIPRYTVSEWLESIRMKRYILHFSAGIDTMECVLELTAEIDLTONGIT
ECK MQCWOQERARARPKFADIVSILDKLIRAPDSLKTADFDEPRVSIRLPSTSGSEGVFRFVSEWLESIKMQYTEHFMAAGYTAIEKVVOQMTNDIKRIGVR
HEK4 lDCWQKDRNNRPKFEQIVSILDKLIRNPGSLKITSAAPRNNLLDQSNVDISTFRITGDWINGVTAHCKEIFTGVEYSSCDTIKISTIDMKKVGVT
HEK5 lDCWQKDRNNRPKFGQIVNTLDKIRNPNLSLKAMAPLSSGINPLDRTIPDYTSFNTVDEWLEAIKMGQYKESFANAGFTSFVDVVSQMMEDILRVGVT
HEK7 lDCWQKERNRSPKFEIYVNMILDKLIRNPSLSKTLVNASCRAVSNLLAEHSPFGSAGAYRSVGEWLEAIKMGRTYEIFMENGYSSMDAVAQVTLLEDLRLRGVT
HEK8 lDCWQKERSDRPKFGQIVNMLDKLIRNPNLSKRTGTSSRPNTALLDPSSPEFSAVSVGDWLOAIRDRYKDNFTAAGYTTLEAVVHNQEDLARIGIT
HEK2 lDCWVDRNLRPKFSQIVNTLDKLI RNASLSKVIASAQSGMSQPLDRTVPDYTTFTTGVGDWLDAIRMGRTKESFVSAGFASFDLVAQMTAEDLLRIGVT
HEK1 lDCWQKERAERPKFEQIVGILDKMIRNPNLSLKTPLIGTCSRPISSLIDQNTPDFTTFCVGEWLOAIKMERKDNFTAAGNSLSLEVARMTIEDVMSLGIT

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(Page 6)

CONS LVGHQKKIILSSIQ.MR.QMNGH.P.V.V
EPH LPGHQKRIILCSIOGEKD
ECK LPGHQKRIIAYSLGLKDQVNTVGIFI
HEK4 VVGPRKKIILSSIKALETOSKNGPVP
HEK5 LAGHQKKIILNSIQVNRAGMNIQISVEV
HEK7 LVGHQKKIIMNSIQEMKVQLVNGMVP.L
HEK8 AIITHQNKIILSSVQAMRTQMGOMHGRMPV
HEK2 LAGHQKKIILSSIQDMRLQNMOTLPVQV
HEK1 LVGHQKKIIMSSIQTMRAQMLHLHGTCIQV

FIGURE 6

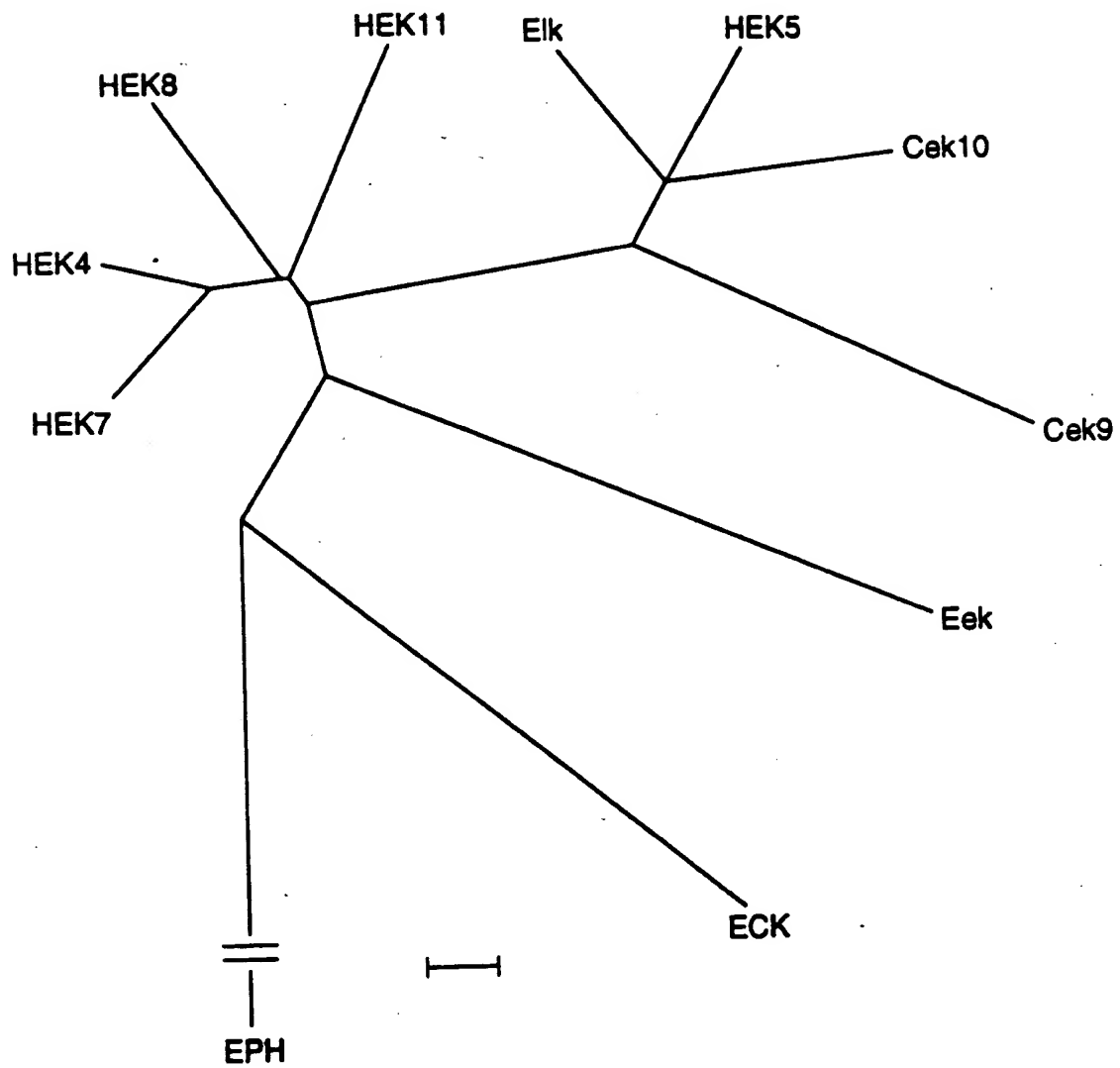
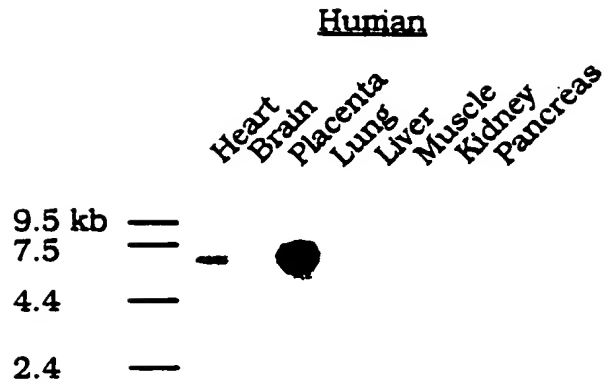


FIGURE 7

(A)



Rat

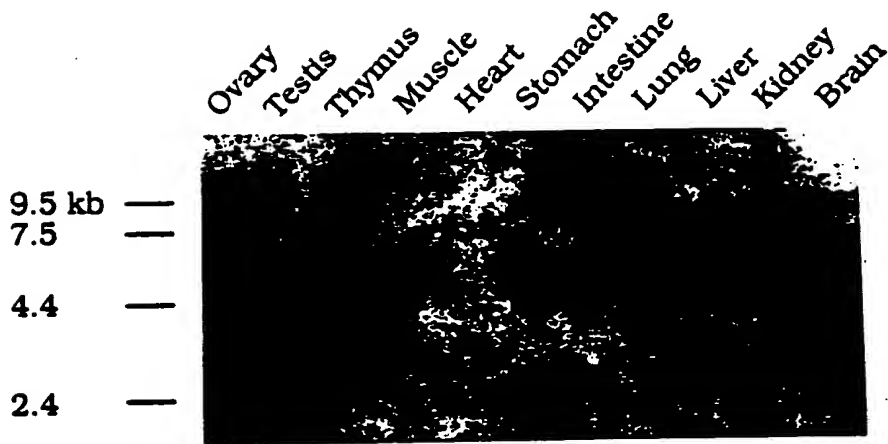
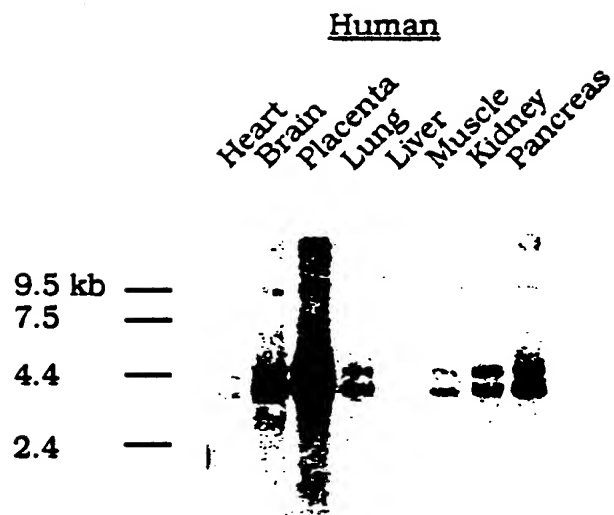


FIGURE 8

(A)



(B)

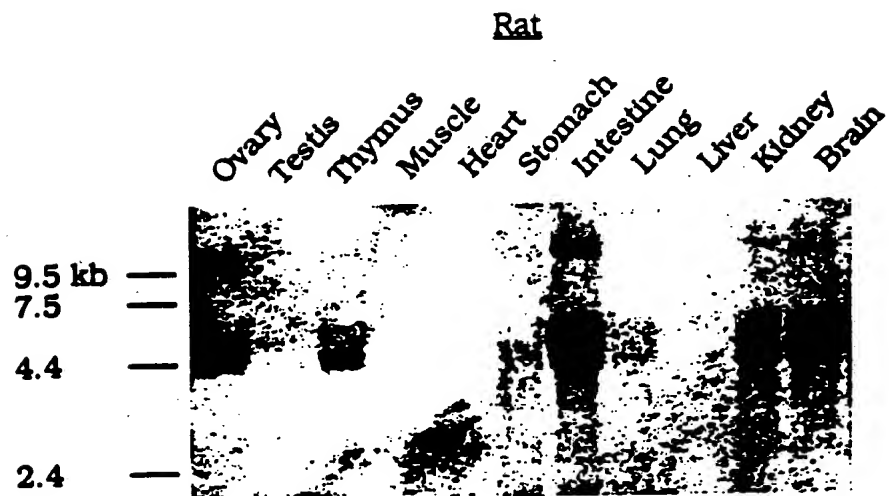
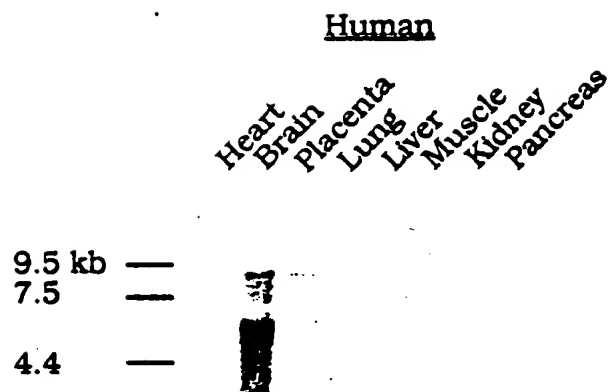


FIGURE 9

(A)



(B)

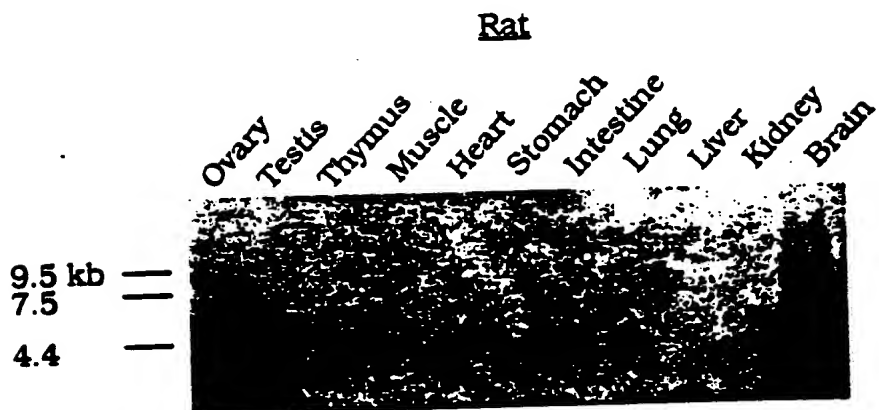
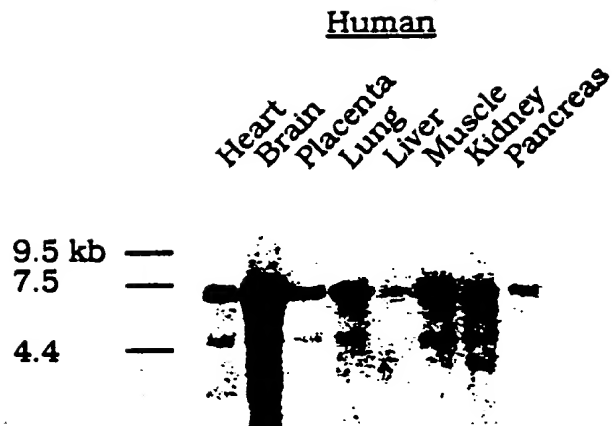


FIGURE 10

(A)



(B)

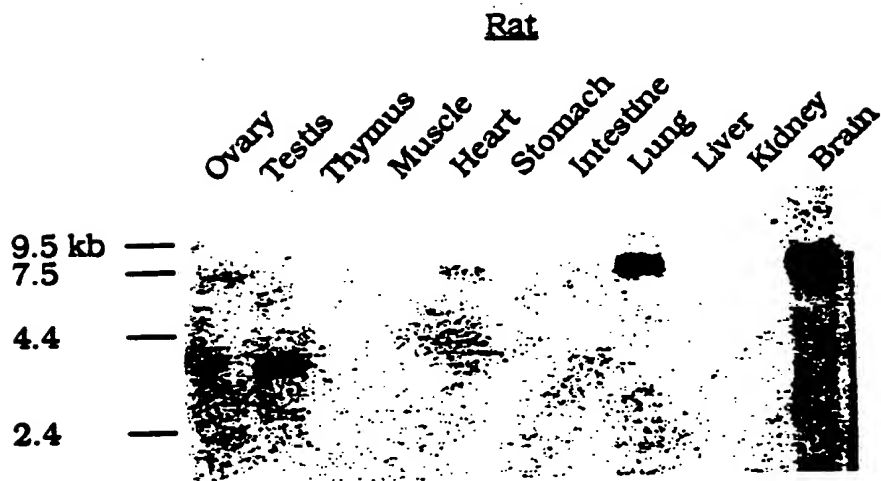
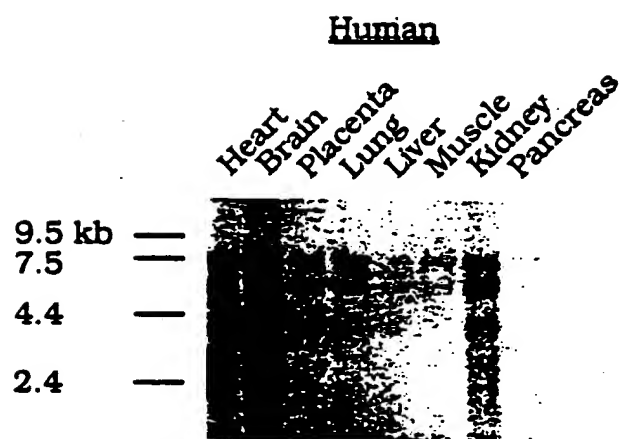


FIGURE 11

(A)



(B)

